ABSTRACT OF THE DISCLOSURE

09/226216

In a method of obtaining a crystalline silicon film having high crystallinity at a low temperature and for a short time by using a catalytic element and using both a heat treatment and irradiation of laser light, a catalytic element which does not require a gettering step is used as the catalytic element for facilitating crystallization, so that a semiconductor device having high characteristics and high productivity is obtained. Specifically, a coating film of an element in group 14, such as germanium, which is the same group of the periodic table as silicon is formed on an amorphous silicon film formed on a glass substrate, a heat treatment at 550°C for 4 hours is carried out, and further, irradiation of laser light is carried out, so that a crystalline silicon film is obtained. In the above structure, the element in group 14, which does not have a bad influence on TFT characteristics even if the element is left in the silicon film, is used, so that the semiconductor device having high characteristics and high productivity can be obtained.